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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,362	03/22/2004	Yohichiro Miyaguchi	250833US2	9471
22850	7590	08/09/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			REIS, TRAVIS M	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/805,362

Applicant(s)

MIYAGUCHI ET AL.

Examiner

Travis M. Reis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20040728.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 11, 15a, 50, 501, 502BK, 502. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 11, 507, 509, 531, 532, 534, and 550. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "12" has been used to designate both a developing area and an electrode. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because, in Figure 75, "27" should be ---76---. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

On page 91, line 2, "402" should be ---420---; lines 19 & 21, "301" should be ---401---.

On page 94, line 12, "336" should be ---436---.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-23 & 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoi et al. (U.S. Patent 4607938) in view of Oikawa et al. (U.S. Patent 5708939).

With reference to claims 1, 5-14, 16-23, & 26-28, Hosoi et al discloses a toner supply device (5) in an image forming apparatus (1) for supplying toner (17) to a surface of an electrostatic transport member (12) which carries the toner with an electrostatic force to a developing position facing a latent image carrying member (3) and develops a latent image on the latent image carrying member (P) by the toner (Figure 1), comprising receiving means (13)

for receiving a mixture of toner composed of toner particles and a two material coated friction facilitating material (16) composed partly of nonmagnetic friction facilitating particles of an average particle diameter greater than an average particle diameter of the toner particles (Figure 2); plural flat member agitating means (33) & electrostatic-charged brush structure carrying means (14) for agitating and carrying the mixture of the toner and the friction facilitating material in the receiving means; further comprising recycling means (103) for recycling toner (Figure 1).

Hosoi et al. does not disclose a mesh contacted by said agitating and carrying means having plural openings for communicatively connecting inside and outside of the receiving means therethrough, the shortest diameter portion of the openings of the mesh being greater than the average particle diameter of the toner particles and smaller than the average particle diameter of the friction facilitating particles, wherein the toner particles in the mixture are discharged from the openings of the mesh and supplied to the surface of the electrostatic transport member, wherein the openings of the mesh are disposed in a posture in which a longitudinal direction thereof is along a direction perpendicular to a carrying direction of the agitating and carrying means, further comprising discharge facilitating means comprising a potential difference electrode member & vibration means.

Oikawa et al. discloses a developing apparatus that uses a mesh (26), in contact with spiral brush agitating means (31) and carrying means (29) consisting of rib members with triangular projections formed on flat surfaces (Figure 4), said mesh having plural openings allowing specifically sized toner particles to pass through said openings in which a longitudinal direction thereof is along a direction perpendicular to the agitating & carrying means (Figure 4), discharged from the openings of the mesh by vibration means (col. 8 line 50). Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to add the mesh member disclosed by Oikawa et al. to the receiving means disclosed by

Hosoi et al. in order to keep the friction facilitating particles from ending up upon the images.

With reference to claims 2-4, Hosoi et al. does not disclose the shortest diameter portion of the openings of the mesh has a size sufficient for allowing passage of at least 80% of the toner particles while preventing passage of at least 80% of the friction facilitating particles the openings of the mesh being non-perfect circles. However, to choose a 80% success rate of a non-perfect circle, absent any criticality, is only considered to be the " optimum " value & shape of the mesh, as stated above, that a person having ordinary skill in the art would have been able to determine using routine experimentation based, among other things, on the desired accuracy and since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to shape the openings of the mesh disclosed by Hosoi et al. & Oikawa et al. into non-perfect circles with at least an 80% success rate in order to prevent smearing by the friction facilitating particles on the paper.

With reference to claim 15, Hosoi et al. does not disclose the agitating member is a butterfly system.

Oikawa et al. discloses an agitating member (35) which is butterfly shaped (Figure 5) for aiding in breaking up large toner particles into fine toner. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to add the butterfly shaped agitating member disclosed by Oikawa et al. to the agitating and carrying means disclosed by Hosoi et al. in order to break up large toner particles into fine toner

9. Claims 24 & 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoi et al. & Oikawa et al. as applied to claims 1-23 & 26-28 above, and further in view of Isonaka et al. (U.S. Patent 3934256).

Hosoi et al. & Oikawa et al. disclose all of the instant claimed invention as stated above in the rejection of claims 1-23 & 26-28, but do not disclose the discharge facilitating means comprise an electrode member with potential difference generating means disposed between the mesh and the toner.

Isonaka et al. discloses an identification card producing apparatus (1) with an electrode (C2) used to produce a corona discharge to pass material to a card through a mesh screen (24) (Figures 2 & 3). Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to add the electrode disclosed by Osonaka et al. to the mesh disclosed by Hosoi et al. & Oikawa et al. in order to speed up the mesh declogging process.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Walkup discloses an apparatus for applying powder to electrophotographic plates (U.S. Patent 2550738). McCarroll discloses development apparatus (U.S. Patent 3532071). Chawda discloses a xerographic development apparatus (U.S. Patent 3599604). Charland et al. discloses a magnetic brush developing apparatus (U.S. Patent 3865081). Hodoshima et al. discloses an image forming apparatus (U.S. Patent 5182601). Nomura et al. discloses a detachable two-frame process cartridge (U.S. Patent 5682579). Hart et al. discloses a point of use toner filtration device (U.S. Patent 5710960). Hart et al. discloses a vibration reducing mounting system for toner filters (U.S. Patent 5722018). Kutsuwada et al. discloses a toner collecting and reusing device (U.S. Patent 6108511). Playfair et al. discloses a developer filtration module (U.S. Patent 6631250).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Travis M. Reis whose telephone number is (571) 272-2249. The examiner can normally be reached on 8--5 M--F.

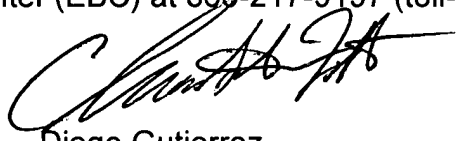
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Travis M Reis
Examiner
Art Unit 2859

tmr
August 8, 2005



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PRIMARY EXAMINER